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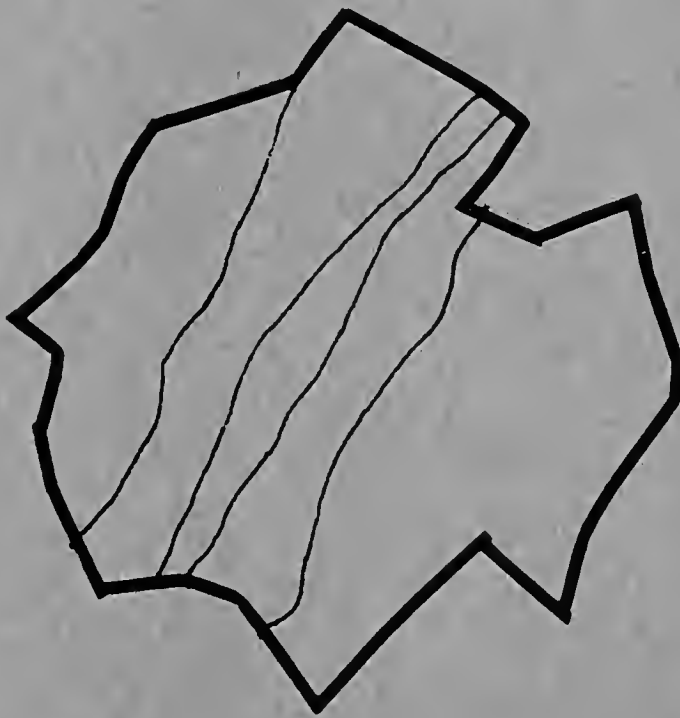
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**GUIDING FUTURE GROWTH
IN THE quad county -
laurel study area**



summary

Parsons, John P. 1984
Publication.

SUMMARY

GUIDING FUTURE GROWTH
IN THE
QUAD COUNTY/LAUREL AREA

A FOUNDATION FOR THE FUTURE

Maryland

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Howard County
Montgomery County
Prince George's County
The Maryland Department of State Planning

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ABSTRACT

The purpose of this document is to summarize the consultant team's final report on Phase One of the Quad County/Laurel Study and also to discuss the highlights of a subsequent analysis and evaluation conducted by the Study Group.

The major component of this summary is derived by the Study Group from the consultants' final report. In the final report, the consultants identified existing development related problems and proposed a concept whereby future population growth will be guided to certain "Development Areas" where that growth can best be accommodated.

Specifically, the consultants recommended:

1. A Development and Conservation Areas Concept be adopted for guiding further growth. Four alternative growth patterns are given to illustrate the basic concept.
2. The detailing of:
 - a. the geographic placement of development and conservation areas;
 - b. the timing and intensity of development activities;
 - c. policies and procedures that could be used to stabilize and direct developmental patterns; and
 - d. the relationship and responsibility of all principal participants.
3. A need for continuing coordinating operations.

The subsequent analysis by the Quad County/Laurel Study Group evaluated the consultants' four alternatives by applying various development constraints and determined the land area consumed at various population densities. The findings and conclusions from that exercise are consistent with those of the Development and Conservation Areas Concept proposed by the consultants.

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PREFACE

The Quad County/Laurel Study is an inter-jurisdictional cooperative planning effort to identify growth related problems in the Laurel area and to suggest a coordinated program for resolving them.

The Phase One work, of which this report is a summary, was primarily a joint effort of the firm of Richard P. Browne/Koepsell-Girard and Associates, Inc. and oversight by the inter-jurisdictional Study Group. The Study Group was composed of representatives from the planning staffs of Anne Arundel, Howard, Montgomery and Prince George's Counties, the City of Laurel, and the Maryland Department of State Planning.

During the study, a number of representatives of local planning agencies, while serving with the Study Group, contributed significantly in this joint effort. Mrs. Marion McCoy, formerly Planning and Zoning Officer of Anne Arundel County, served as Chairwoman. Other former Group members making significant contributions were Mrs. Patricia Heidel and Mrs. Kathryn Waters from the Maryland Department of State Planning; Mr. Alvin McNeal from the Maryland-National Capital Park and Planning Commission; and Mrs. Natalie Lobe from the Howard County Office of Planning and Zoning.

In addition to the summary of the consultants' findings, this document contains a supplement which outlines the Study Group's analysis and evaluation of the consultants' work and concludes with recommendations and policy guidelines.

It should be stressed that this study represents the first phase in an effort to guide and direct growth in the Quad County/Laurel Study Area. In this phase, a generalized plan, the Development and Conservation Areas Concept, was put forth as the best means of structuring future growth.

In the next phase, a commonly accepted growth pattern, development policies and specific issue-oriented action programs will be formulated and implemented.

Section I

INTRODUCTION

BACKGROUND

The Maryland-National Capital Park and Planning Commission (M-NCPPC) in August 1969, called a meeting of area jurisdictions and planning agencies to determine what could be done to resolve the growing development problems in and around Laurel. The State, regional and local jurisdictions represented at this meeting agreed that specific action was necessary and that any approach should directly involve elected officials.

During the last half of 1972, the work program was finalized and the State, through the Department of State Planning, offered staff assistance and "701" funding support to the venture.

It was decided that a study effort should be initiated which would (1) identify conditions which have led to problems in the area, and (2) develop growth strategies useful in addressing these problems.

STUDY AREA AND PARTICIPATING JURISDICTIONS

Six jurisdictions participated in the Quad County/Laurel Study. These are: The State of Maryland (through the Department of State Planning); the counties of Anne Arundel, Howard, Montgomery and Prince George's; and the City of Laurel. The Planning Director of each jurisdiction and other agency staff as appropriate have acted as the technical Study Group in guiding the consultants' work.

For the purposes of Phase One of the Quad County/Laurel Study, the Study Area was defined as the area bounded by the Capital Beltway and State Route 100 on the south and north, respectively; and the Penn Central line and New Hampshire Avenue on the east and west, respectively. When collecting data, however (i.e. population and economic projections, etc.), the Study Area was defined as those areas of Anne Arundel, Howard, Montgomery and Prince George's Counties near the City of Laurel in the mid-section of the urban corridor between Baltimore and Washington.

THE PURPOSE AND FRAMEWORK OF THE STUDY

The primary responsibility given to the consultant team was to suggest policies and mechanisms by which anticipated growth in the Study Area could be satisfactorily guided. More precisely, it was expressed by the Study Group that these policies and mechanisms enable the local jurisdictions to cope with the development related problems that have arisen as a result of this growth.

Although it was indicated that these problems are commonly argued by "no-growth" or "limited growth" theorists as demonstrations that growth, or "bigness" is not, as many believe, good, it was stressed that it is generally understood by both government officials and the citizenry at large in the Study Area that jurisdictional doors cannot simply be closed to future growth. Realistically, certain growth must be accommodated in the Quad County area

for constitutional as well as economic reasons. Thus, the question arises: how can this population and economic growth be guided to optimally serve the best interests of both existing and future residents of the Study Area?

Within the context of this question, therefore, it was the purpose of the Quad County/Laurel Study to:

- Identify the problems caused by past population growth;
- Analyze the conditions which led to these problems;
- Examine ways to manage future growth to mitigate existing problems as well as to avoid their recurrence in the years ahead;
- Suggest strategies and policies for shaping future growth that can be jointly implemented at the local, county and State level, and provide guidance to Study Area jurisdictions on steps to be taken to facilitate actual implementation of the results of the study.

Moreover, it was felt by members of the Study Group that to effectively shape future growth the Study must address the allocation of future population to the most suitable areas in order to minimize public, private and environmental costs. In so doing, the study was designed to recognize and evaluate the suitability of various locations for development and to delineate those areas most suited for future growth.

STUDY DOCUMENTS

Several interim documents were prepared in the course of the Study. These documents, together with the results of a series of working meetings with the Study Group, served as the principal inputs to this report. A summary of the content of the interim documents is presented below:

- Working Paper Number One: Preliminary Statement of Findings.
This paper is a compilation of data collected by the consultants during the summer and fall of 1973. Included are 1970 Census and other contemporary population data and projections. Also included is information on public facilities, local government organization, and other pertinent subjects.
- Working Paper Number Two: Problems Created by Past Growth.
This paper presented fifteen specific problem areas that were uncovered during the inventory.
- Working Paper Number Three, Part I: Methodologies for Growth Allocations.
This paper described a methodology developed by the consultants to allocate growth in the Study Area. The method employed physical constraints and opportunities; quality of life indicators; and public goals, objectives and policies.

- Working Paper Number Three, Part II: An Assessment of Growth Center Alternatives. This paper discussed growth and conservation strategies and policies. Thirteen potential development areas were identified and analyzed with specific suggestions for considering these as focal points for future growth.
- Working Paper Number Four: The Public Role in Influencing Patterns of Development. This paper presented an overview of the land use planning process in terms of Federal and State policies affecting local urban planning; pertinent land use planning programs, State-oriented controls and incentives; and a selection of land use controls and administrative arrangements applicable at the regional and local levels.
- Fiscal Impact: A Preliminary Analysis. This paper presented a preliminary forecast of the fiscal impact on local governments in the Study Area of projected population growth.

The consultant team's final report entitled Guiding Future Growth in the Quad County/Laurel Area: A Foundation For the Future, contained the major findings of the interim documents and also suggested alternatives and strategies.

Section II

GROWTH RELATED PROBLEMS IN THE STUDY AREA

THE PROBLEMS CAUSED BY PAST GROWTH

The predominant pattern of growth through the Study Area has been that of small scale, disjointed sprawl development producing a negative economic and visual impact. Certain factors have contributed to this pattern:

1. Zoning has, at times, encouraged the extension of development to outlying locations as an alternative to further concentration in existing urban areas.
2. The physical location and access structure of the corridor has also encouraged extended rather than localized growth. Between the two metropolitan areas, corridor residents commute in diverse origin and destination patterns. This predominance of the two urban areas, combined with ease of access, thus reinforced the spread pattern of both residential and revenue producing development.
3. Substantial risks to developers in undertaking large scale projects have encouraged the spread of smaller developments throughout the Study Area.

Besides the adverse visual impacts of this sprawl-type development, undesirable economic impacts have also resulted from this pattern of growth. They can be summarized by the costly extensions for water, sewer and utilities that have occurred as a result of each new development beyond existing urbanized areas. Moreover, acreage adjacent to already serviced land has been bypassed.

The Environmental Impact of Past Development Practices

Research conducted as a part of this study disclosed four areas of negative environmental impact caused by past development practices. First, the coverage of prime aquifer recharge areas, although not considered a critical problem at the time of the study, could have a major impact in the future. Second, the increased run-off caused by past development has affected flooding and the amount of sedimentation carried to area streams, rivers and marshlands. A third environmental impact has been the covering over of prime mineral resources and the resulting loss of these aggregate materials. A fourth problem, the loss of vegetation and wildlife, has also resulted from the pattern of past development. Loss of vegetation not only reduces the amount of available habitat but, in many cases, precipitates run-off and soil erosion.

Public Costs to Support Growth

Although the scope of this study did not allow for development of documentation on the public costs associated with past growth, interviews and secondary research undertaken by the consultant team revealed several interesting conditions. In sum, it was found that past development patterns have increased public facility and services costs substantially. Factors that have contributed to this situation have included:

- The development of major portions of counties primarily for residential use which is not self-sustaining. The problems of fiscal imbalance have also surfaced in areas with higher concentrations of low and moderate income persons.
- In some cases, development has been permitted to occur to the end of overloading certain public facilities (i.e. roadways, water and sewerage treatment facilities).
- "Leap frog" development that causes growth to occur in areas not contiguous to urbanizing areas has resulted in the expensive extension of public infrastructure, as referenced earlier; although this problem has diminished in recent years with the introduction of multi-year water and sewer planning,
- Finally, the dispersed nature of past development has also played a role in increasing public service and facility costs.
- Because of relatively low densities and sizes of developments, it has seldom been possible to generate economies of scale in either public capital or service investments.

Demands Made Upon Existing Infrastructure

Past growth has also produced negative impacts on public infrastructure, especially water supply, sewage disposal systems, and transportation facilities.

Water Supply. The principal impact concerns the ability of existing supplies to meet present and projected demand. More specifically, only as a result of existing water transfers among the three drainage basins that serve the Study Area -- the Patapsco, Patuxent and Potomac basins -- has growth of recent years been accommodated. Without this shared approach it is questionable if this level of service could have been provided. This availability is not infinite, however, and problems are beginning to develop. One example is the shortage during drought periods in the Liberty Reservoir of Baltimore's water supply system.

These water supply problems can be ameliorated through concerted action. Cooperation among the jurisdictions to control demand for water is an immediate and feasible task. In addition, provision must be made for additional raw water storage.

Sewage Treatment. The current lack of capacity of some treatment systems serving the Study Area is another result of past planning and development practices. For example, the sewer moratorium currently in effect in Montgomery and Prince George's Counties is the result of inadequate treatment capacity in the Anacostia Basin and Blue Plains and Piscataway Treatment plants.

Even with the completion of planned expansions, the capacity of the Blue Plains plant will be reached in a relatively short period of time. Water supply and river hydrology waste water must be considered as interdependent items.

Transportation. Historically, the Study Area has been viewed as a corridor with major north-south access with few focal points between these major transportation arterials. Continued growth and the energy crisis point up the need for east-west interconnections and realistic transit alternatives to the automobile.

FACTORS THAT HAVE CONTRIBUTED TO OR COMPOUNDED THESE PROBLEMS

The Nature of the Public Planning Function

The corridor area possesses one of the most intensive resource pools for dealing with the problems and opportunities of future growth. Unfortunately, certain negative conditions were observed in an otherwise very positive situation. Namely, although the planning function has reached a rather sophisticated state, its thrust has generally been to address the problems of the individual jurisdictions or regions rather than those issues confronting the corridor or the Study Area as a whole.

In addition to diluting the potential to resolve the problems associated with growth, this arrangement has sometimes led to a competitive situation. For example, although State, regional and local governments are all engaged in planning for future growth in the corridor, they frequently have different perspectives that compete and sometimes conflict with one another.

The principal interjurisdictional coordinating tool for alleviating conflict has been the A-95 review and comment process. The process, which is established by Federal regulation, requires that grant requests by local jurisdictions must be reviewed and commented upon by a regional agency before the grant is awarded. This insures that the proposal is evaluated to assure that it does not duplicate or clash with regional or State plans and policies.

Two major limitations to this approach exist, however. First, the problem of polarization remains with the Regional Planning Council reviewing plans in Howard and Anne Arundel Counties, and Metropolitan Washington Council of Governments reviewing plans for Montgomery and Prince George's Counties. Secondly, the A-95 review process focuses mostly on federally assisted projects. Many public facilities that can potentially impact development in the Study Area are funded solely with State or local revenues and may not require A-95 reviews. Thus, the chance for interjurisdictional coordination under A-95 may be lost in these latter cases.

The next few years will bear witness to a situation in which the development oriented decisions of one jurisdiction will have a direct and immediate impact on its neighboring jurisdictions. Recent examples of this impact relationship include the highway planning and construction that essentially empty inter-regional highway traffic into residential portions of the City of Laurel.

Another example of development-related decisions in one jurisdiction having an impact elsewhere is represented in the land use delineation along the Howard/Anne Arundel County boundary. Here, industrial land uses in one jurisdiction directly border on residential areas in another, a situation which represents an obvious incompatibility in the land use planning program of the two counties, and a conflict which has not been resolved.

The nature of this type of problem is that if each jurisdiction plans for future growth with only its own best interests in mind, independent of its neighboring jurisdictions, there will eventually be winners and losers. The only conclusion that can be drawn from these findings, and it must be

considered tentative at best, is that the local planning and implementation process in the corridor must begin to consider intergovernmental aspects as well as looking inward.

To date, the four counties and the City of Laurel have concentrated primarily on the problems of their respective jurisdictions. Organizations such as the Maryland-National Capital Park and Planning Commission, Regional Planning Council, Washington Suburban Sanitary Commission, and Metropolitan Washington Council of Governments have added a certain interjurisdictional dimension within the Baltimore and Washington regions themselves. However, no organization below the State level currently provides a forum for coordinating planning on an inter-regional level. Such coordination must be effected by all involved governments on a comprehensive and continuing basis if the challenge of future growth in the corridor is to be properly and successfully addressed.

Zoning Changes

The process and the results of zoning changes have also had a negative impact on growth in the Study Area. For example, past practices concerning zoning changes have, because of the general procedures used, been of a piecemeal variety. This is not to say that one zoning change will necessarily have a major negative impact on an area master plan, but rather that the collective results of several such changes can have the effect of diminishing the utility and effectiveness of the planning process to deal with the broader problems of growth.

The past patterns of zoning changes are also deficient in that such decisions have been made with only limited consideration of existing service and facility capacities and resulting fiscal impact. Another negative fiscal impact is caused by too much land being rezoned for residential use relative to more revenue productive commercial and industrial uses.

A final way in which rezoning practices have adversely affected planning in the Study Area relates to the nature of the parcels concerned. Land rezoned for residential use (or for more intensive residential use) has, for the most part, involved developments of relatively small scale and not stressed the planned unit development approach.

Government/Developer Relations

Essentially, as a result of circumstance, there has existed an adversary-type relationship between government planners and decision makers and the development community. The development industry, and particularly the speculator-developer, has found it relatively easy and quite profitable to "break plans".

Another factor which many believe has perpetuated this adversary relationship has been the fragmented nature of the development community. Tracts are acquired, planned, subdivided, developed, built, marketed and financed and, characteristically, these functions are performed sequentially with a different company involved in each stage. Thus, persons from the industry that deal with public planners have represented only small segments of the overall industry. Government officials have been at a loss to deal with the development community in a way to identify and achieve the broad interests of both the public and private sectors.

Section III

A CONTINUATION OF PAST PLANNING AND DEVELOPMENT ACTIVITIES

THE THRUST OF CURRENT PLANS AND POLICIES

A great deal of commonality was found in terms of the types of problems being faced in the various jurisdictions and the goals and objectives established to resolve those problems. For example, the following policies and approaches were explicitly stated or clearly implied in nearly all general and area plans:

- The need to structure for future growth is urged.
- The staging of public facilities is stressed to achieve (1) more economical development of public capital improvements; and (2) the use of public facilities to guide and shape future growth.
- The preservation of the Patuxent River watershed is emphasized, including conservation, recreation and water quality planning efforts.
- The neighborhood concept is reconfirmed.
- It is urged that the financial burden for both capital and operating costs for public facilities be borne by those who benefit.
- The provision of park and open space opportunities by both the public and private sectors is stressed.
- Open space is considered not only for recreation purposes, but as a means to add structure to urban growth and to conserve natural resources.
- Balanced transportation systems are promoted.

A CONTINUATION OF PRESENT PLANS AND POLICIES

Bearing in mind current plans, policies and implementation mechanisms, an attempt was made to project the physical and procedural impact of a continuation of present approaches. Team findings fell into five areas.

Land Utilization

Drawing from an examination of present land uses and land use plans, information was obtained on future land consumption. Approximately 20% or 34,000 acres of the Study Area's 170,330 acres is now in residential use or zoned accordingly. Other land uses include approximately 9,000 acres or 5% in commercial use; 3,600 acres or 2% in industrial use; 91,600 acres or 54% in open space, and 32,500 acres or 19% in public and institutional use.

When one examines projected land utilization as set forth in current plans some rather revealing changes are observed. For example, insofar as major use categories are concerned, several changes can be expected, as follows:

- Residential land use will increase to approximately 63,400 acres, or an increase of 88%.
- Land set aside for commercial use will decline from approximately 9,000 acres to 2,400 acres, or a decrease of 73%.
- Industrial land will increase by more than 8,300 acres to a total of 11,900 acres, or an increase of more than 230%.
- Public and institutional land will increase by 12%, from 32,500 acres to 36,400 acres.

Moreover, given fulfillment of existing plans, the land use composition of the Study Area will change significantly. A summary of this change is presented in the following table.

Changes in Land Use Distribution Given
Fulfillment of Current Plans

<u>Land Use Type</u>	<u>Land Use in Percent of Total</u>	
	<u>Present</u>	<u>Projected</u>
Residential	19.7%	37.2%
Commercial	5.3	1.4
Industrial	2.1	7.0
Open Space	53.8	33.0
Public/Institutional	<u>19.1</u>	<u>21.4</u>
Total	100.0%	100.0%

Land Area Provided With Sewers

Another indicator of growth in the Study Area concerns the amount of land to be provided with sewer service. Current water and sewer plans indicate that of the total 170,330 acres in the Study Area, 36,350 acres are now sewered. Upon fulfillment of current plans, this figure will increase to more than 73,000 acres, or 43% of the Study area. This represents an increase in sewer coverage of more than 100% over the life of existing plans.

Environmental Ramifications

Based upon current county plans, the environmental impact of development relates predominantly to the potential coverage of aquifer recharge areas and areas rich in mineral aggregate.

The Potential for Implementing Current Plans and Policies

The review of plans and policies has led to two principal findings. First, a great deal of innovative and perceptive planning is being carried out by the jurisdictions represented in the Quad County/Laurel Study Area, but the

current effort represents the first time the problems and opportunities of the increasingly homogeneous and interdependent areas have been brought together. Second, the past successes and anticipated potential for plan and policy implementation is at best uncertain because successful implementation of mechanisms to effectively address issues and problems depends largely on interjurisdictional coordination and cooperation, an ingredient that has often been lacking in the past.

The Impact of Current Planning Tools

Although a variety of innovative planning devices has recently been developed by Study Area jurisdictions, it is believed that these devices will produce only limited success in guiding and shaping future growth. For example, Study Area zoning ordinances have been amended to include comprehensive design zones, planned neighborhood zones, CBD districts and rural zones, among others. Subdivision regulations have also been modified to include more refined sections dealing with planned unit developments, grading, erosion control, open space dedication and the preservation of existing features. Still other measures are being developed to provide for comprehensive rezoning of portions of some counties and the planned staging of public infrastructure investments in others.

Each of these tools and strategies clearly address one or more of the growth problems now being faced in the Study Area. However, the team's belief that only limited success will be realized is based upon its opinion that the effective shaping of growth will require:

- the coordinated application of a variety of public controls as well as incentives;
- the combined and coordinated involvement of State, regional, county and local governmental agencies;
- the consideration of a geographic area that encompasses, at a minimum, the entire Study Area; and
- the involvement of the development community in the planning of programs, policies and strategies.

SUMMARY

The problems caused or brought to the surface by past growth, when viewed in their entirety, are in every sense complex. In summary, these problems relate to the size, nature and location of development efforts; to their impact on the environment; and to their effect on the public sector's physical and financial ability to provide adequate services and facilities. In examining past efforts to respond to these problems, several limitations were observed. For example, although planning resources in the corridor are substantial, the effective coordination of efforts to impact the Quad County/Laurel Study Area has not, heretofore, been achieved. In addition, even when plans have been developed -- although oriented to only a limited part of a jurisdiction in the Study Area -- implementation has been hindered by legal or citizen challenges to certain tools (i.e. comprehensive design regulations and staging policies in Prince George's County), by piecemeal changes to zoning maps, and by the poorly coordinated use of available tools. Finally, even though there are

only two main actors in the growth process -- public elected officials and planners, on one hand, and the development community, on the other -- there exists an adversary relationship that has precluded constructive interaction.

During the next two decades, it is projected that the population of the Study Area will more than double; by the turn of the century it will reach nearly 600,000. What can be done to guide and shape this growth in such a way as to mitigate existing problems while avoiding their recurrence in the future? Even more directly, what steps can be taken to minimize the social, environmental and fiscal costs of growth, while maximizing freedom of movement and choice for both existing and future populations?

The answers to these questions are, by their very nature, intricate. The answers must also, because of the competing and frequently conflicting needs of producers (the development community), consumers (the general public), and the architects of growth policy (public officials and planners) strike a workable compromise.

STEPS TO BE TAKEN TO SHAPE GROWTH INCLUDE THE FOLLOWING:

1. Future growth (i.e. residential, commercial and industrial) must be directed to areas that can best accommodate intensified development, bearing in mind such factors as environmental considerations, institutional capacities and existing public policies and goals.
2. Future growth must be discouraged in areas that are environmentally sensitive to development or where, because of physical constraints, the cost of development becomes critical. These areas should be preserved or conserved, or used for low intensity activities (i.e. parks, open space, agriculture, low density rural development, etc.).
3. A comprehensive implementation strategy must be developed that encompasses the Study Area and that can cause each of the previous steps to be accomplished. The strategy must represent a well-coordinated package of tools that: (1) can either encourage or discourage growth; (2) brings into play all appropriate levels of government within the State; and (3) that is cognizant of the needs of producers and consumers.

In the following three sections, a discussion of these steps is presented.

Section IV

A METHOD OF ACHIEVING RATIONAL AND RESPONSIVE GROWTH IN THE STUDY AREA

The need to logically distribute future growth stems from the problems cited in the previous section. The principal problems have been sprawl and piecemeal development. As a result of these difficulties an uncoordinated pattern of growth, costly in both economic and environmental terms, has resulted.

In order to counteract the diseconomies of past patterns of development while at the same time more efficiently utilizing our diminishing natural and fiscal resources, it is imperative that future growth be accomplished through phased comprehensive developments. Only in this way can manageability be achieved.

The economic benefits of logically distributed growth can be realized in development areas where concentrated growth permits fuller and hence more efficient use of facilities and requires less costly extensions of transit and public services and facilities. Also, with concentrated growth centers, a more efficient utilization of natural resources will result and the quality of life will be enhanced.

DEFINING DEVELOPMENT AND CONSERVATION AREAS

Development Areas

A projection of growth trends indicates that the greatest increases in residential land requirements in the twin metropolitan areas will occur in those portions of the four counties lying within the Baltimore-Washington corridor. And, within that corridor, the area comprising the Study Area will be subject to the greatest pressures.

The concept of development areas is one of relative expansion, usually in terms of population size and concentration, that produces a nucleus of sustained growth from which the forces of development are both absorbed and transmitted to other places, especially the immediately surrounding areas. A development area is therefore different from normal development in that it also functions as a major generator of regional growth in addition to being, in terms of population, employment and income, a rapidly growing area in its own right. Other criteria identifying a development area include its relative predominance over other urban places within a larger geographic area as a result of certain locational, economic or other advantages. In terms of locational factors, for example, development areas are located near key communication and transportation linkages.

In theory, a development area should serve several purposes:

1. It should possess an infrastructure for consolidating and strengthening existing advantages and for establishing the base from which to plan for sustained growth.

2. If it is to succeed in an environment of other similarly sized development areas, it must draw from its own distinct and unique strengths that not only isolate its particular socio-economic function but that complement the strengths and functions of other development areas.
3. It must be integrated with smaller cities in its regional sphere so that these cities launch their own plans for development.

Baltimore and Washington represent large-scale development areas with the former serving as the heavy manufacturing and transportation hub, while the latter draws its strengths from government, services and light industry. And, like Dallas-Fort Worth, and several other centers across the country, the land area between is not only urbanizing but is also generating a second order of development areas.

Conservation Areas

Conservation areas, as defined in this study, include those areas which are to be preserved permanently as open space because of environmental constraints or other reasons, and also those areas in which development will be deferred until some point in the future. Conservation areas are viewed as serving a number of complementary functions. In summary, they should be designed to:

- protect environmentally sensitive areas such as flood plains, aquifer recharge areas, wildlife habitat, etc.;
- provide open space relief as well as recreation opportunities for persons in the development areas;
- offer buffers between development areas to protect against sprawl that would eventually "fill in" those locations between development nodes;
- protect and provide opportunities for productive agriculture and mineral extraction;
- maintain a rural setting not only as a physical relief to development areas, but to provide choice of living environment to present and future populations; and
- serve as "holding zones" or deferred development areas until the expansion of urbanized nodes is deemed desirable.

CRITERIA FOR LOCATING DEVELOPMENT AND CONSERVATION AREAS

Several sets of criteria and analysis techniques were employed in identifying potential development and conservation areas. In the following pages the team's methodology is described.

Physical Constraints

For purposes of analysis, physical constraints were divided between "absolute" and "variable". Drawing from an analysis of the policies and goals of participating jurisdictions, the absolute constraints were defined as follows:

- Floodplains. The areas of flooding of all major and secondary streams and rivers in the Study Area were considered unbuildable because of poor soils, wildlife habitat, and danger to life and property during periods of heavy rainfall.
- Existing Urbanized Areas. Areas that are presently developed in urban or suburban uses were considered unavailable for future growth. In-fill of unused land within developed areas and re-development, however, was considered possible as was the possibility of these areas becoming the focus for development areas.

Variable constraints were then refined and formed into various combinations. Each of these combinations was then applied to determine how they would affect the amount of land available for development. Physical constraints described as variable:

- Stream Valley/Open Space Network. Because of the generally established and growing nature of the area's stream valley park system.
- Federally-Held Lands. The large federally-owned lands in the Study Area should be considered as a constraining feature. However, their potential for transfer to another agency or level of government, or possibly to a development organization, justifies their definition as a variable constraint.
- Slope. Two maximum allowable slope categories were employed. These were slopes with more than a 15 percent grade, and those greater than a 25 percent grade.
- Soils. Two alternative soils criteria were utilized:
(1) those with two major constraining characteristics; and
(2) those with three. The soils constraints considered included: poor drainage, low bearing capacity, shallow depth to bedrock; high seasonal water table.
- Existing Highway Network. Constraint and opportunity for growth.
- Existing Plans for Public Transportation. Will affect the pattern of development.
- Primary Sources of Mineral Aggregates. This refers to those areas where major deposits of economically valuable mineral resources can be extracted. Of particular interest would be the sand and gravel deposits common in the Laurel area and along the Patuxent River.

- Absence of Water and Sewer Service Within the Next 10 Years. This would include areas which, in accordance with local water and sewer plans, will not be served with these utilities within the next 10 years.

Applying the Physical Constraints

By applying these constraints in varying combinations, it became possible to identify alternative areas that may be more sensitive or susceptible to future development. More specifically, the following combinations were presented:

- Alternative 1: This alternative presented the impact of only the two absolute constraints, and the area's existing transportation system. As such, it represented the "minimum constraints" alternative.
- Alternative 2. This included the absolute constraints and transportation system, and added the stream valley/open space network and federally-held lands.
- Alternative 3. This combined the absolute constraints and transportation system with areas with a slope in excess of 15 percent and soils with two constraining characteristics. Soils with two constraining characteristics represent a moderately constraining condition, but one which can be relatively easily overcome with additional costs or innovative construction techniques.
- Alternative 4. This alternative included each of the constraints referenced in Alternative 3, but utilized 25 percent as the maximum slope and soils with three constraining characteristics. NOTE: Slopes greater than 25 percent can, for all practical purposes, be considered the absolute maximum for all forms of construction. Likewise, soils with three constraining limitations in most cases present serious problems for development.
- Alternative 5. This alternative applied the absolute constraints, the area's transportation network, and areas not to be provided water and sewer service within the next ten years. Essentially, this alternative defined lands available for immediate growth, if all other constraints are considered surmountable.
- Alternative 6. This alternative combined the constraints illustrated in Alternative 5 with areas known to be primary sources of mineral aggregate. The result was a more detailed picture of short-term limitations to growth.
- Alternative 7. This alternative combined the absolute constraints and transportation system with slopes greater than 15 percent, primary sources of mineral aggregate, and soils with three constraining factors. This approach was felt to be realistic within

the Study Area in that: (1) the 15 percent slope can be considered more practical than 25 percent; (2) it is commonly accepted that construction aggregate should be protected and extraction should be staged in conjunction with development; and (3) soils with three constraining characteristics are considered to be unbuildable.

- Alternative 8. This alternative combines the constraints in Alternative 7 with land not to be served with water and sewer in the next decade, the stream valley/open space network, and federally-held land.
- Alternative 9. The final alternative presented the implications of a "maximum constraints" approach, using each of the referenced constraints (including the 15 percent slope and soils with three constraints). This alternative illustrated that very little developable land would remain in the Study Area.

Quality of Life Indicators

The next step in the process involved the application of a series of "quality of life" indicators to the various alternatives. Essentially, areas that "fell out" as developable after introduction of the various constraints were assessed via those indicators to more precisely define their potential as development areas.

Scores of possible quality indicators were examined as to their potential application in the review process. The following, however, were felt to provide the clearest and most concise basis for comparative assessment:

- New Community Potential.
- The Use of Existing Physical and Institutional Capabilities.
- Access to Major Recreation and Open Space Opportunities.
- Natural Habitat.
- Impact on Key Facilities.
- Access to Employment and Commercial Centers.

Goals, Objectives and Policies

The final group of factors upon which the growth distribution alternatives were reviewed concerned established State, county and local positions on future growth. More specifically, the various alternatives were examined as to how they related to the planning goals, objectives and policies of these governmental entities.

Maryland State Goals and Policies Employed in Reviewing Potential Development Areas

- To conserve and optimize State expenditures.
- Protect and/or discourage development in flood plains, areas of steep slope, fresh water wetlands, historic sites and structures, principal aquifer recharge areas, water supply reservoirs and their watersheds.
- Protect and/or carefully guide development around key facilities.
- Uses that would adversely affect highway capacity.
- Urban transportation development should be used as a catalyst for planned urban growth.
- Appropriate development should be encouraged at planned transit stations.
- Agricultural land should be preserved.
- Growth must minimize and eventually eliminate sedimentation, pesticide pollution and storm water overflows.
- Locations of new uses will not be adversely affected by, or will not adversely impact current and planned water and sewage treatment facilities.
- Future land use planning must take full cognizance of existing and pending ambient air quality standards.

Similarly, at the county and local level, the various goals, policies and objectives expressed in adopted and approved planning documents were reviewed. In cases where the position was relevant to the current study, and where at least three of the five participating jurisdictions generally supported a particular goal or policy, it was selected for review.

County and Local Goals, Objectives and Policies Used in Evaluating the Various Combinations of Constraints

General Land Use

- Create a balanced socio-economic environment with particular attention to employment opportunities and various housing choices.
- Encourage the assembly and development of large tracts in suitable locations.
- Communities should be renewed to avoid housing, economic and social deterioration.

- Coordinate Laurel's development with the growth within the corridor area.
- Provide a broad tax base.
- Public plans must be realistic in providing enough land for each type of urban development but, at the same time, public policy should not be used to inflate rural land prices artificially.
- Insure the development of a varied residential pattern for a wide range of income groups and age groups adequately served by community facilities.

Living Areas

- High population densities shall be in convenient proximity to public facilities and services.

Commercial and Industrial Land Use

- New industry should diversify the employment base, the tax base and protect the environment.
- Commercial activities consistent with sound planning practice should be self-contained in a compact shopping area and not spread along the highways.
- Locate employment concentrations at points of maximum accessibility to public transportation.
- Establish activity centers as neighborhood and community focal points which provide a combination of commercial shopping and public facilities.

Transportation

- Recommend highway alternatives in a regional, as well as local context.
- Provide an adequate, balanced circulation system properly related to living areas and other land uses.
- Increasing in-place employment is urged as a means of reducing peak-hour capacity requirements.

Public Facilities

- Make public investments in community facilities in the most efficient manner to insure compact, orderly urban development and maximum service.

- Assure the provision of adequate services and facilities, properly timed to the needs of development and population growth.
- The intensity of land development will depend upon public water and sewerage system.

Resource Conservation and the Environment

- Protect stream valley corridors to reduce flooding, pollution and sedimentation and to preserve ecological features.
- Land characterized by high water tables shall be reserved for conservation and recreation purposes.
- Development of land on steep slopes shall not be permitted.
- Preserve the integrity of flood plains.
- Raise the quality of the environment by staging the extraction and concurrent rehabilitation of natural resource areas.
- The best agricultural land should be protected to insure the production of food and fiber. Use agricultural land as separators or buffers between urban concentrations.

With regard to public goals and policies, it was found that although certain combinations of constraints produced more effective results than others, the Development and Conservation Areas Concept had the overall potential to achieve, either absolutely or optimally, all major planning objectives.

One final consideration included in the evolving decision process concerned the nature of vacant parcels of 50 acres or more under single ownership in and around potential development areas. This condition will make eventual land aggregation much more feasible.

Results

The process of applying the various aforementioned constraints resulted in the definition of thirteen locations qualifying as existing or potential development areas. These locations suffered minimum development constraints and, for the most part, offered outstanding opportunities for development.

Existing and Potential Development Areas

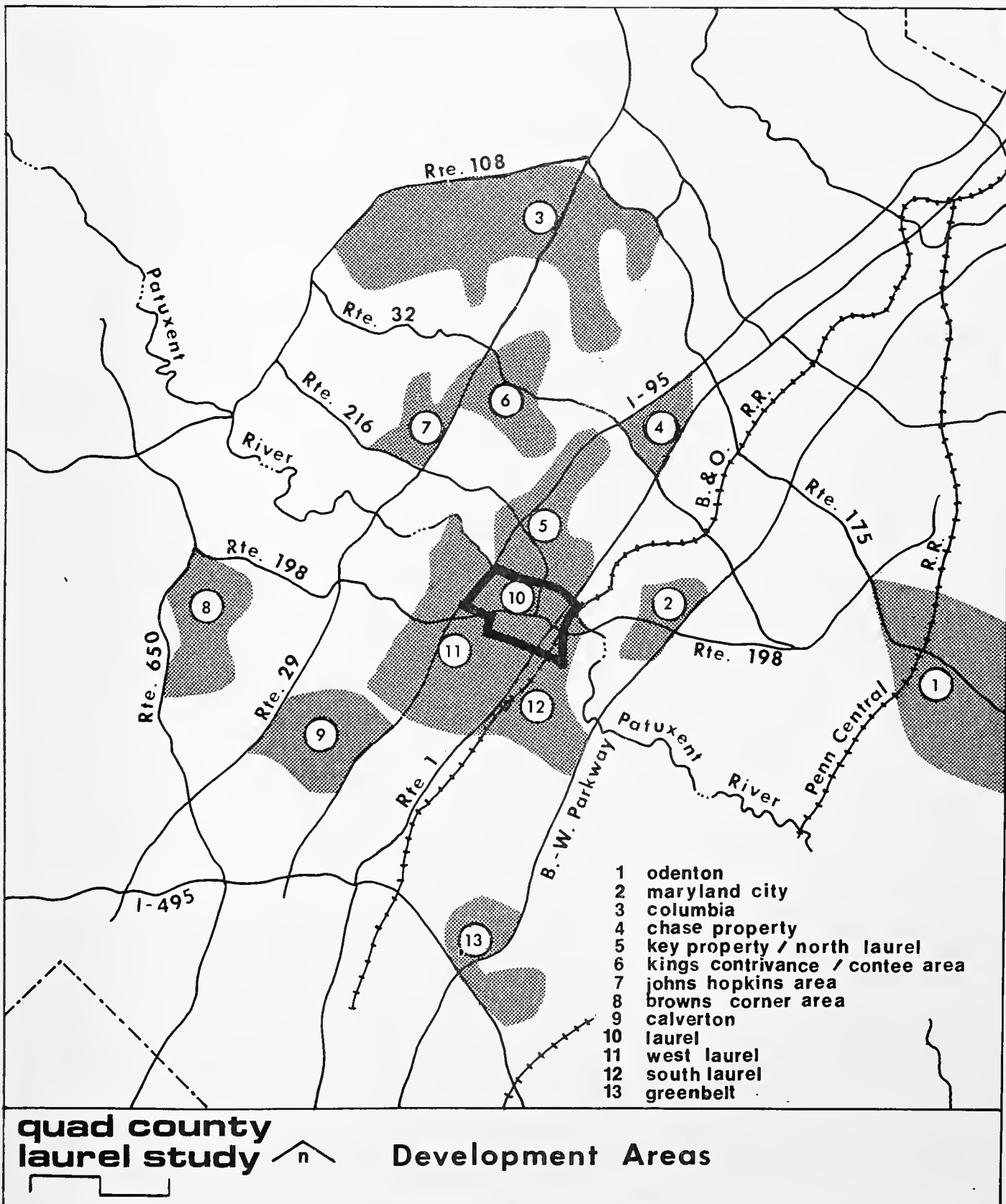
Anne Arundel County:
Maryland City
Odenton

Howard County:
Columbia
Chase Property
North Laurel/Key Property
Kings Contrivance/Contee
Johns Hopkins

Montgomery County:
Brown's Corner
Calverton

Prince George's County:
West Laurel
South Laurel
Greenbelt

City of Laurel



Section V

APPLYING THE DEVELOPMENT AND CONSERVATION AREAS CONCEPT

INTRODUCTION

The previous section identified thirteen areas that, based on the criteria and constraints applied in the Study Area, can best be expected to sustain future growth. The question remains, however, as to how this future growth should be allocated spatially and over time. Inasmuch as the answer to this question requires a more detailed level of study — economic and market feasibility and comparative analysis; fiscal impact analysis; and the development of community design standards and criteria, etc. — this section provides only illustrative strategies as to how the concept may be applied.

The strategies presented in the following pages utilize gross residential density as the principal basis of comparison. As a point of reference, gross density in the total Study Area in 1970 -- based on a population of 249,168 people -- was 1.71 persons per acre. By 1990, when the Study Area population is expected to reach nearly 554,000, gross density will be 3.80 persons per acre. (This compares, for example, with the 1970 gross density of the District of Columbia of 17.64 persons per acre.) Table 1 on the following page provides a more detailed breakdown of current and projected densities in the Study Area.

The significance of this information lies in the realization that the Study Area can physically absorb projected growth while maintaining a moderate gross density. By directing this growth to nodes of more concentrated development, the overall results will be to economize not only on natural and fiscal resources, but on urbanized areas and open space.

TWO STRATEGIES FOR APPLYING THE DEVELOPMENT AND CONSERVATION AREAS CONCEPT

Within the context of gross density relationships, two strategies for applying the Development and Conservation Areas Concept might be based on the following objectives:

- A strategy designed to minimize the consumption of raw land, environmental impacts and public capital and service investments, while maximizing existing services, facilities, diversities and other social and institutional strengths of the Study Area; or,
- A strategy designed as a means of distributing future growth in order to provide overall lower densities in development areas, to more effectively utilize existing institutional capacities in smaller, or "secondary" development areas, and to effect long-term development phasing. This latter strategy would, of course, result in a greater consumption of land.

Table 1

Present and Projected Gross Density in the
Quad County/Laurel Study Area a/

County Portions of Study Area	Estimated Total Dwelling Units		Acres	Population		Persons/Acre		Dwelling Units/Acre	
	1970	1990		1970	1990	1970	1990	1970	1990
Anne Arundel (3.5 persons/ household) <u>b/</u>	13,043	24,654	28,140	45,651	86,290	1.62	3.07	.46	.87
Howard (3.7 persons/ household)	9,253	44,027	55,066	34,237 <u>c/</u>	162,900	.62	2.98	.16	.80
Montgomery (3.6 persons/ household)	19,703	36,625	32,448	70,930	131,790	2.19	4.06	.60	1.12
Prince George's <u>d/</u> (3.2 persons/ household)	<u>30,734</u>	<u>54,016</u>	<u>30,093</u>	<u>98,350</u>	<u>172,850</u>	<u>3.27</u>	<u>5.74</u>	<u>1.02</u>	<u>1.72</u>
Totals and Averages	72,733	159,322	145,747	249,168	553,830	1.71	3.80	.50	1.09

a/ County General Plans and Richard P. Browne Associates/Koepsell-Girard and Associates.

b/ Persons/Household Averages from Quad County Study Working Paper No. 1; Chart III-1. Those averages form basis for estimates of total dwelling units and dwelling units/acre ratios shown for 1970 and 1990.

c/ This figure assumes a 1973 population estimate of 30,000 for the City of Columbia. The actual 1970 population of Columbia (as per the Census) was 13,121.

d/ All figures include the City of Laurel

Strategy One: Concentrating Growth in a Minimum Number of Development Areas

This strategy could be achieved in two ways: (1) by concentrating growth in the three largest and most accommodating development areas — Columbia, Greater Laurel and Odenton; or (2) by encouraging a majority of future growth, for example, 75 percent to locate in these three areas, while permitting the remainder to disperse in other development areas. Table 2 displays the statistical implications of this strategy.

If the first alternative were employed, all of the projected 249,000 new residents would be distributed among the three largest development areas. The others would maintain their 1970 population and gross density.

The second alternative would permit lower gross densities but would still maintain a level of concentration consistent with the Development and Conservation Areas Concept.

Strategy Two: Distributing Future Growth

The second strategy would result in the growth of each of the potential development areas. Two possible alternatives also exist under this strategy. First, population could be encouraged so that the projected growth would be distributed according to the proportion of the total Study Area each development area represents. The second alternative simply permits current 1900 Regional Planning Council and Washington Council of Governments projections to be realized. Table 3 displays the statistical implications of this strategy.

Under the first alternative of Strategy Two, gross densities among the development areas would range from 7.83 to 7.84 persons per acre in Johns Hopkins and Brown's Corner, respectively, to 15.23 persons per acre in Calverton. The gross density in the three largest areas would be comparable to, but less than, those produced through the second alternative in Strategy One.

With the second alternative under Strategy Two, gross densities would range from 4.06 and 4.52 in Brown's Corner and Johns Hopkins, respectively, to 14.33 in Odenton.

Table 2

Strategy One: Concentrating Future Growth a/

<u>Development Area</u>	<u>Conditions in 1990 Based on Alternative One b/</u>		<u>Dwelling Units Per Acre</u>		<u>Conditions in 1990 Based on Alternative Two c/</u>		<u>Dwelling Units Per Acre</u>
	<u>Population</u>	<u>Persons/Acre</u>	<u>Population</u>	<u>Persons/Acre</u>	<u>Population</u>	<u>Persons/Acre</u>	
Columbia	136,901	9.78	110,211	7.87	2.12		
Greater Laurel	148,536	13.06	125,629	11.04	3.44		
Odenton	64,694	9.97	52,111	8.05	2.29		
Contee, Key, Chase and King's Contrivance	9,086	3.16	28,361	9.85	2.66		
Johns Hopkins	2,250	1.82	10,333	8.33	2.25		
Greenbelt	12,640	8.48	22,590	15.16	4.73		
Calverton	18,400	9.09	32,080	15.84	4.95		
Brown's Corner	2,910	1.77	14,102	8.60	2.38		
Total	395,417		395,417				

a/ Richard P. Browne Associates/Koepsell-Girard and Associates.

b/ Assumes 100 percent distribution of new growth to Columbia, Greater Laurel and Odenton

c/ Assumes 75 percent distribution of new growth to Columbia, Greater Laurel and Odenton with remainder to other development areas.

Table 3

Strategy Two: Dispersing Future Growth a/

<u>Development Area</u>	<u>Conditions in 1990 Based on Alternative One b/</u>		<u>Dwelling Units Per Acre</u>	<u>Conditions in 1990 Based on Alternative Two c/</u>		<u>Dwelling Units Per Acre</u>
	<u>Population</u>	<u>Persons/Acre</u>		<u>Population</u>	<u>Persons/Acre</u>	
Columbia	114,565	8.13	2.21	110,000	7.86	1.98
Greater Laurel	126,251	11.09	3.46	113,098	9.94	3.10
Odenton	54,598	8.43	2.40	92,800	14.33	3.12
Contee, Key Chase and King's Contrivance	26,496	9.21	2.48	27,100	9.42	2.54
Johns Hopkins	9,711	7.83	2.11	5,600	4.52	1.22
Greenbelt	20,101	13.49	4.21	18,040	12.11	3.78
Calverton	30,835	15.23	4.75	22,114	10.92	3.41
Brown's Corner	12,860	7.84	2.17	6,665	4.06	1.12
Total	395,417			395,417		

a/ Richard P. Browne Associates/Koepsell-Girard and Associates.

b/ Assumes population distribution according to the proportion of the total Study Area that each development area represents.

c/ Assumes realization of current 1990 population projections.

Table 4

Projected Sewage Capacity Versus Demand Based on Potential Development Strategies a/

	Treatment Plant			
	Savage	Parkway- Maryland City	Blue Plains- Piscataway	Central Patuxent
<u>Development Areas Served</u>	All Howard County development areas	Laurel, W. Laurel and S. Laurel	Brown's Corner, Calverton and Greenbelt	Odenton
1990 Projected or estimated capacity (in millions of gallons per day) <u>b/</u>	*15.0	*12.5	25.4	15.0 <u>c/</u>
Required Capacity: <u>✓</u>				
Strategy One:				
- Alternative One	18.5	18.6	4.2	8.1
- Alternative Two	18.6	15.7	8.6	6.5
Strategy Two:				
- Alternative One	18.8	15.8	7.8	6.8
- Alternative Two	17.9	14.1	5.9	11.6

a/ Maryland Environmental Service and Richard P. Browne Associates/Koepsell-Girard and Associates.

b/ This represents total plant capacity, not merely capacity for Study Area.

c/ Capacity through 1985.

d/ Required capacities based on 125 gallons per day per person average.

*NOTE: Consultants' figures were adjusted by the Department of State Planning staff to reflect current thinking.

Measuring the Impact of These Strategies

It is possible to weigh the effect of the proposed strategies on planned sewage treatment capacity in that the capacity of the impacted plants has been projected through 1990. The anticipated impact of the development strategies on sewage treatment capacities is presented in Table 4.

Under the four development alternatives it appears most of the sewage treatment plants would be overloaded. It must be remembered, however, that the capacities shown are mostly estimates and that ongoing planning efforts could have a significant effect on these figures.

With regard to water supply, irrespective of the strategy chosen, sources for supplying the Study Area will have to be increased. Presently, most of the Study Area is supplied by the City of Baltimore and through Potomac River processing plants, although the Anne Arundel portion of the Study Area is served by wells. Thus, the area is at the terminus of both sources of supply and vulnerable to any increase in demand from areas which are closer to the two sources.

Although the general ramifications of the proposed development strategies can be discussed, a more detailed statistical analysis will be necessary to specify fiscal, service, facility and other requirements and impacts. Because of cost considerations, this level of analysis should be undertaken for only those strategies with actual implementation potential. And, because the study process has not involved top-level public decision makers, the development community and the public-at large, the development strategies presented herein could not possibly be honed to this necessary level of precision.

THE ROLE OF POTENTIAL DEVELOPMENT AREAS

The Reason For Role Definition

As referenced, the potential development areas were delineated because they met certain physical, institutional and public policy criteria. In an attempt to create real places for these conceptual entities — a requisite to ultimate implementation — the possible roles these areas might play in the overall Study Area were explored. By defining the role of each development area and by dealing from existing strengths and capacities, the overall concept will be strengthened in its ability to make the Study Area a "place" rather than an undistinguishable area between two major metropolitan centers.

Proposed Role Definitions

Regardless of the final development strategies and phases employed in implementing the proposed allocation concept, each of the development areas possesses strengths and capabilities from which their overall function should be derived. Bearing in mind their individual characteristics together with projected population, demographic and economic conditions, these roles may be defined as follows:

Columbia - New town and primary development area serving as an areawide employment, commercial, recreation and cultural center.

Odenton - A primary development area and rapidly growing residential center.

Greater Laurel Area - Including the City and the North, South and West Laurel areas, the Key property and the Maryland City area -- a primary development area emphasizing labor intensive service and employment activities.

Johns Hopkins Site - Low density residential.

Chase Property - Industrial employment center.

Calverton - Suburban community with diverse housing types.

Greenbelt - A secondary center of diverse housing densities.

Brown's Corner - Low density residential.

King's Contrivance/Contee - Adjuncts of Columbia, mixed residential densities.

Section VI

HOW THE DEVELOPMENT AND CONSERVATION AREAS CONCEPT WILL WORK

INTRODUCTION

The Development and Conservation Areas Concept described herein is believed to be a sound approach to resolve as well as to avoid the recurrence of growth related problems in the Study Area.

Realization of the concept will require an untiring commitment to the achievement of current land use and environmental goals. This commitment will be difficult as it will severely test the political community to develop a plan of action and to marshal its resources to achieve that plan. At the same time, this commitment will also test the moral fabric of the development community and the citizens of the Study Area in that it will call for significant changes and sacrifices for a common good.

Finally, this commitment will call for all levels and units of government in the Study Area as well as the development community and citizens' groups to work together -- cooperatively, constructively and openly -- to achieve a better future. This, also, is not only difficult but unprecedented at such a scale.

Moreover, in this section the Study Team could only present tools and techniques available to implement the concept of development and conservation areas. It could not submit a blueprint for success. It will be the responsibility of the actual participants in the growth process to make the concept work.

THE ROLE OF THE STATE

Although controversy envelops the most appropriate role of the Maryland State Government in land use planning, the State can be termed the logical institution for developing overall strategies for controlling future urban growth. The State combines a metropolitan perspective, powers to mitigate conflicting local policies, and broad-based political expertise in achieving this end.

In achieving the Development and Conservation Areas Concept in the Study Area, the State of Maryland (through its Legislature as well as several key executive departments) must play the role of precipitator and participant. For only through the State's law making and administrative powers can several implementation tools be brought to bear. A great variety of tools and devices are or could be made available and include:

- Areas of critical State concern.
- Key facilities and developments of greater than local concern.
- Public development corporation.

- Public purchase of land.
- Land banking.
- Donation to public trust.
- New taxing strategies.
- Agricultural assessment incentives.
- Coordinated capital budgeting.
- Special development districts.
- Clean air and other pollution standards.
- Land capital gains taxation.
- Tax sharing of new growth.

THE ROLE OF REGIONAL AND LOCAL PUBLIC AGENCIES

Within the context of the development and conservation areas scheme the role of regional and local public agencies will also be important. Essentially, it will be at this level that detailed locational and phasing plans will be formulated; that enforcement and regulating functions will be performed; and that the true implementation of the concept will be realized. Of course, there will be several areas in which State and local jurisdictions will function as co-equal participants in the process:

- Planned community and other "flexible" and "incentive" zoning districts.
- Comprehensive rezoning.
- Conditional zoning.
- Adequate public facilities ordinance.
- Development allotment permits.
- Environmental impact statements.
- Capital improvements programming.
- Annual water and sewerage planning.

Other Criteria for Evaluating Development Proposals

As an additional method of measuring the impact of future developments, the Urban Institute has developed a system to help evaluate rezoning and other land use changes. The measurements span a wide variety of subject areas (i.e. economics, natural environment, aesthetics and cultural values, health

and safety, recreation, education, local transportation, housing, shopping and social conditions and community morale). This approach would be of greatest benefit should an overall implementation plan be adopted and implemented.

The measurements are intended to help provide explicit, systematic and comprehensive consideration of the impacts of the proposed development on the citizen, community and various clientele groups. Emphasis is placed on developing practical, readily understandable measurements of these impacts of development.

DEFINING A PLAN AND A PLANNING AREA

Successful utilization of the development and conservation areas concept will require the formulation of a final physical and policy-oriented plan. This device must clearly identify, at a minimum, the geography of development and conservation areas; the timing and intensity of development activities; policies and procedures to be used to stabilize land prices in key portions of development areas; and the relationship and responsibilities of all principal participants.

Successful implementation of the overall concept will hinge on a close and more formal working relationship between Laurel, the four counties and the State of Maryland.

SUMMARY: HOW THE DEVELOPMENT AND CONSERVATION AREAS CONCEPT WILL WORK

The Development and Conservation Areas concept responds to the problems of past growth in the Study Area, recognizes environmentally sensitive land and, by way of addressing social, economic, physical and institutional strengths, will focus future growth in areas where it can best be accommodated.

Assuming the involved governmental jurisdictions can agree to a plan of action and can organize to respond to total Study Area needs, the concept can have a marked effect on the private development community. This impact could be generated by the application of economic incentives to encourage growth in Development Areas coupled with controls to limit growth in Conservation Areas.

Thus, by making it more difficult and less profitable for an entrepreneur to build in conservation areas or areas staged for later development, while at the same time providing financial, procedural and other incentives in development areas, a great deal of leverage would be generated.

The benefits of this approach, to the public at large, would also be substantial. They would include more effective environmental protection; the more effective use of public capital and service investments; an improved structure to future urban development; more readily available and useable parks and open space; improved transportation, communications and access; and a system through which the costs and benefits of future growth would be more equitably distributed.

It should be stressed that this study represents the first phase in an effort to control growth in the Quad County/Laurel Study area. Here, a generalized plan, the Development and Conservation Areas Concept, was put forth as the best means of structuring future growth. In the next phase of this study effort, a more specific growth pattern consistent with the basic concept will be selected and policies for implementing this more detailed plan will be developed.

quad county/laurel study group

**SUPPLEMENT TO:
GUIDING FUTURE GROWTH
IN THE QUAD COUNTY -
LAUREL AREA
a foundation for the future**

QUAD COUNTY/LAUREL STUDY GROUP

ANALYSIS AND RECOMMENDATIONS

This supplement discusses the major findings of the Study Group's analysis and evaluation of the consultants' recommendations. It also contains the Study Group's recommendation for further action and implementation programs. Finally, the Appendix contains policy guidelines to be used in the continuing process of guiding growth within the Study Area.

The Consultants' Findings and the Study Group's Critique

Very briefly, the consultants analyzed existing conditions and growth-related problems in the Study Area. To combat problems of sprawl, overburdening of roads and utility infrastructure and related difficulties, the consultants formulated the Development/Conservation Areas Concept.

This concept would channel most future population growth into specific "Development Areas", the main ones being Greater Laurel, Columbia and Odenton. Future growth would be discouraged from occurring in "Conservation Areas" such as floodplains and areas with slope and soil impediments.

To illustrate the possible directions of growth, two growth strategies, each with two alternatives, were developed. These four alternatives allocate population growth to the "Development Areas" using different criteria as shown below:

Concentrating Growth - Strategy #1:

Alternative #1 - 100% of development area growth into three major development areas.

Alternative #2 - 75% of growth to the three major areas/
25% to secondary areas.

Dispersing Growth - Strategy #2:

Alternative #1 - growth allocated to all development areas on the basis of proportion of area/population.

Alternative #2 - realization of current 1990 projections.

The "Development/Conservation Areas Concept" expressed in the four alternatives represent the consultants' major findings and recommendations.

Because of the generalized nature of the "Development/Conservation Areas Concept", plus the fact that its selection of development areas was often skewed toward open areas not always considered by local jurisdictions to be prime development nodes, the Study Group determined that the concept required further evaluation and, where necessary, revision. Emphasis was placed on:

1. Defining the Concept in terms of the specific growth pattern.
2. Analyzing and providing any quantitative interpretation of impacts: fiscal, physical, etc.
3. Identifying the spatial pattern of population growth, its density or the amount of land to be consumed for each of the four growth alternatives, while giving a generalized picture of the possible locations of population growth and its distribution.
4. Evaluating the consultants' assertion that an area's attractiveness for development is based in large part on the availability of vacant land in single parcels of greater than 50 acres in size.

Analysis of the Development/Conservation Areas Concept

The Study Group's analysis utilized the Maryland Automated Geographic Information System (MAGI) of the Department of State Planning, tested the consultants' four basic alternatives by:

1. Application of natural and man-made constraints;
2. Determination of land available for development;
3. Analysis of areas planned for water and sewer service; and
4. Distribution of projected population as derived by the consultants from existing projections to determine the amount of land consumed under each alternative at various trial densities. The following trial densities were used in this effort. The towns shown represent areas where these densities presently exist:
 - (a) sprawl - 2,500 persons per mile
 - (b) low - 5,000 " " " (Annapolis, Columbia)
 - (c) medium - 7,500 " " " (Hyattsville, Seat Pleasant)
 - (d) high - 10,000 " " " (Chillum, Dundalk)

Findings

1. Higher densities should be seriously considered as a means of reducing infrastructure costs. At higher densities, the anticipated future population of the area could be accommodated without infringing on sensitive areas. Anticipated population would not require as much land as is presently programmed for water/sewer service in the county 20-year sewer plans.

2. At the higher densities of 7,500 and 10,000 persons per square mile, most new development would occur near Laurel, Columbia and Odenton between the major west-east river valleys dissected by the large industrial belt and major highways running north to south. Major open areas would remain the Patuxent River Valley "wedge" to the west and the Beltsville-Fort Meade "wedge" to the east. Other major open areas would be the minor stream valleys and the Patapsco watershed. Concentration of development would insure that major features and areas of environmental concern are left undeveloped while population growth is channeled to those areas best suited for development.

3. Application of lower densities would create a sprawl effect with growth spreading to eventually every area of available land except federal installations and the land programmed for industrial development. This obviously would have serious fiscal, environmental and social impacts.

4. A large amount of vacant land exists in and around the three major development areas. Development should be encouraged to "in-fill" within existing and proposed urban areas utilizing existing infrastructure to the fullest extent.

5. The physiography of the Study Area lends itself to a natural division of development centers, open space and communication corridors. This urban corridor is crossed by a series of river systems, including the Patuxent, which form green bands within the urban fabric that extends from Baltimore to Washington.

6. Existing plans and policies recognize the same basic constraints to development and the same objectives for effective, efficient and desirable development as proposed by the consultants.

7. The federal lands at the Beltsville Agricultural Research Center and Fort Meade should remain undeveloped. Additional federal agencies should not be allowed to develop there, and if declared surplus, the State and local governments should acquire title and preserve this land for open space and recreation.

8. Urban encroachment not only threatens the water quality of the Patuxent watershed, but also its aesthetic and environmental qualities. The Governor's Patuxent River Watershed Advisory Committee identified five major problem areas requiring immediate attention:

- (a) waste water disposal;
- (b) public water supply;
- (c) erosion and sedimentation;
- (d) park, recreation and open spaces; and
- (e) preservation and enhancement of the estuary.

9. Improved development patterns and quality of life within the Study Area depend upon implementation through a combination of State programs and laws on the one hand and local government authority and controls on the other.

RECOMMENDATIONS

1. State and local endorsement of the Development/Conservation Areas Concept, emphasizing Columbia, Laurel and Odenton as the areas of primary development.

2. Selection of policy guidelines for implementing the Development/Conservation Concept which will be used jointly by local governments and State agencies.

3. Selection of development patterns and densities, testing and determination of public service and facility needs, and program commitment by all appropriate local and State agencies.

4. Continuation of the Study Group, composed of staff representatives, as the vehicle for continuing coordination and identification of action programs. The Department of State Planning could serve as staff to the Group and would insure the coordinated involvement of all appropriate State agencies and local jurisdictions.

ACTION PROGRAM

Selecting issues or problems of an interjurisdictional nature and the mobilizing of State and local agencies to resolve them.

The Study Group recommends that elected officials choose one of the following issues for further action:

The future disposition of federal lands to insure that uses are compatible with local and State plans and policies.

Implementing a program to control flooding along the Patuxent in the Laurel area.

Coordination to insure that each jurisdiction's designation of "Areas of Critical State Concern" is compatible with comprehensive plans and policies of neighboring jurisdictions and is consistent with the tenets of the Conservation and Development Areas Concept.

The objective of this endorsement and selection process would be the commitment of local and State governments to a concept, patterns and policies which are realistic, enhance the quality of life, and through joint efforts are attainable.

APPENDIX

Policy Guidelines for Development Within the Quad County/Laurel Study Area

- I. The first group of guidelines represents constraints which prohibit or limit growth in certain locations. These constraints are imposed by natural and environmental features, existing development, and also by local decisions on the location and staging of various infrastructure improvements necessary to support development.

A. Floodplains

Areas lying within 100 year floodplains are unbuildable because of their function as wildlife habitats and the dangers to life and property during periods of heavy rainfall.

B. Stream Valley/Open Space Network

Development should be limited in stream valleys and these areas should be reserved for use as parks and open space.

C. Slopes

Development should be limited on land with a slope of greater than a 15% grade.

D. Soils

Development should not occur in areas where soil types are unsuitable for building. For purposes of this study, soils with three constraining characteristics (such as poor drainage or impermeability, low-bearing capacity, shallow depth to bedrock, and high seasonal water table) are considered unbuildable.

E. Federally Held Lands

Restrict development on currently held federal lands. This is a particularly important factor in the Laurel Study Area because of the existence of large federal holdings there.

F. Existing Urbanized Areas

Development in such locales should be concentrated on infill of unused parcels of land and the redevelopment of blighted or run-down areas.

G. Prime Sources of Mineral Aggregate

Development in certain locales until the resources (such as the sand and gravel resources common in the Laurel area) have been removed and the land surface has been restored.

II. The Second Group of guidelines are to be used in evaluating a sector's desirability as a development area. Besides being relatively free of the aforementioned constraints, a locale must possess certain qualities, as outlined below, in order to be considered as a development area.

- A. Designation of a particular sector as a development area must be in keeping with the local comprehensive plan, as well as the plans and programs of State agencies.
- B. Development areas must contain sufficient open developable land to sustain significant growth.
- C. The area must be adequately served, either at present or at such time as development is scheduled to occur, by adequate sewer/water infrastructure as well as by other essential government services.
- D. These areas must be served by an adequate transportation system to include highways and/or mass transit.
- E. Employment, educational and cultural activities sufficient to meet the needs of local residents must exist within the development area itself or be readily accessible at nearby locations.
- F. The area must provide its residents with sufficient recreation and open space.

III. The final set of guidelines concerns the actual structuring of growth within the development areas themselves.

While these principles repeat some of the ideas discussed in previous guidelines, their intent is different in that they address specific land use relationships rather than general characteristics of development and conservation areas as a whole.

A. General Land Use

- 1. Efforts should be geared toward creating a balanced socio-economic environment with particular attention toward the creation of diversified employment and housing choices and the development of a rational spatial distribution of land uses throughout the region.
- 2. Major land use and development decisions within each jurisdiction should take regional goals and needs into account.
- 3. Public plans must be realistic in providing enough land for each type of urban development to meet the demands of urban growth; but, at the same time, policies should not be used to inflate rural land prices artificially by extending urban zoning beyond realistic estimates of development needs.

B. Residential Areas

- 1. New residential development will be encouraged to locate in or near existing development areas which are already served by public roads, sewage and water systems, and other basic amenities.

2. Residential areas shall be developed as cohesive interrelating units which are in close proximity to schools, shopping centers and recreation areas.
3. Residential development shall be staged in keeping with the government's fiscal ability to provide necessary facilities and services and with the developer's willingness to share the burden of increasing existing and proposed facilities and services as required to support the new development.
4. The provision of a wide range of housing types, serving various age and income groups, shall be encouraged throughout the study area.

C. Employment Areas

1. These areas will be located so that they are accessible to public transportation, to include buses, jitneys, and other modes of travel.
2. Employment activities will be located within reasonable distances of residential areas in order to reduce unnecessary travel.
3. The employment base should meet regional needs as well as those of the existing and local populations.
4. Employment centers shall be separated from residential areas by use of appropriate buffering techniques that consider sight (including signs and lighting), sound and dust.

D. Commercial and Industrial Land Use

1. Planning for the location of industry is aimed at the strengthening of the areas employment base, including particularly its tax base, and the protection of the best aspects of its environment.
2. Industry will be encouraged to locate on sites which will minimize nuisance upon living areas.
3. Commercial activities shall, if possible, be placed into compact shopping areas. Such activities shall not be permitted to spread along with highways in commercial strips with no regard for traffic flows, safety, attractiveness, or the effect on surrounding development.

E. Transportation

1. An adequate, balanced circulation system should be developed to serve the rapidly growing population of the corridor region.
2. The development of the transportation system within the Study Area should be staged to complement the overall development in the region.

3. Highways and transit facilities shall be planned to minimize their destructive physical impact on the environment and to provide the best possible opportunity for development in those areas selected for growth.

F. Public Facilities

1. Community facilities will be provided in the most efficient manner to encourage compact, orderly growth in development areas.
2. Public facilities, such as water and sewerage systems, will be properly timed in order to respond to the needs prompted by varying levels of development and population growth in the different growth areas.
3. The intensity at which land can be developed will depend upon the level of water/sewerage systems and other community facilities which can be provided in the particular area.

G. Natural Environment, Conservation and Open Space

1. Private Land Development

- a. Jurisdictions shall promote the retention and protection of trees, streams, and other ecological features in developing areas, encouraging private developers to capitalize upon these natural areas in small, as well as large, developments.
- b. Sediment and erosion control methods shall be the responsibility of the developer and shall be utilized in all construction areas. These shall be planned, approved and monitored by the appropriate public offices prior to and during any development.

2. Stream Valleys and Floodplains

- a. The stream valley system and other areas unsuitable for development because of topography or other natural features shall be purchased by or dedicated to, or otherwise controlled by, the public to insure compliance with the multiple-purpose theory of conservation, recreation, and the preservation of natural beauty and open space.
- b. Where floodplain and steep slope areas of the stream valleys are developed for recreation, the development shall be compatible with the natural character of the land and with surrounding development.
- c. Where slopes adjacent to watercourses exceed 12 percent (12%) and soils are not well suited for development, existing forest land shall be retained in its present form to provide infiltration zones for precipitation and/or surface runoff. These areas shall be reserved through mandatory dedication during the development review process. Any land not forested shall be adequately revegetated to provide adequate infiltration zones.

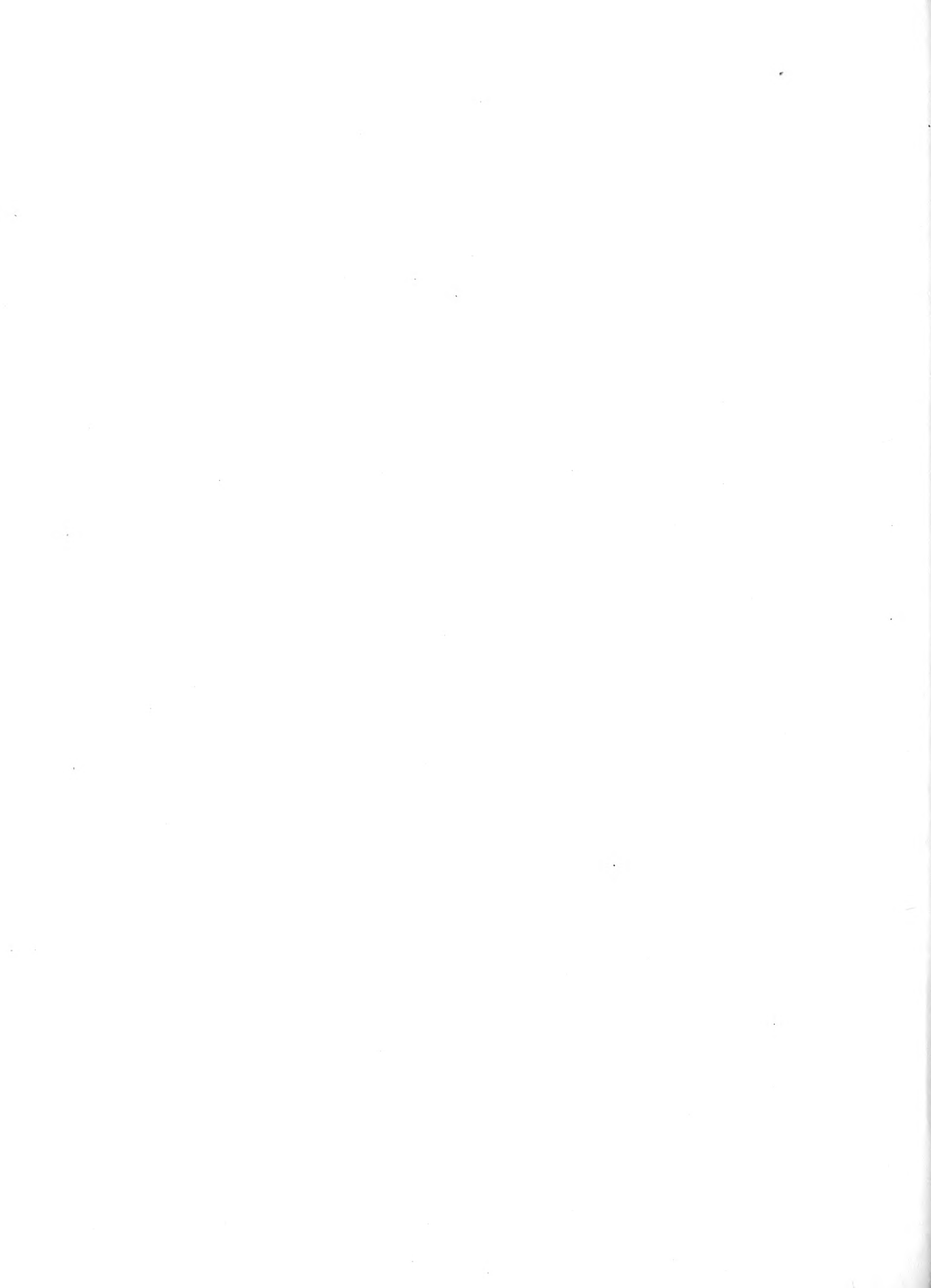
3. Buffer Zones

- a. The retention of wooded lands for recreation, conservation, and screening purposes shall be encouraged throughout the planning area.
- b. Where two or more incompatible land uses are planned, existing forest land shall be retained in its present form, to provide a buffer against noise, air pollution, and other incompatible features.
- c. Any land specifically set aside for buffer zones shall have only limited use (recreation or open space) so as to conserve the buffering effects that the vegetation affords the community against noise and air pollution and other incompatible features.

4. Mining

- a. Land use controls shall be established to provide for the staged removal and efficient utilization of natural resource deposits.
- b. Upon completion of a phase of the operations, mineral extraction sites shall be restored to a usable form by grading, filling, and planting prior to, or concurrent with, the initiation of subsequent phases of the operations.

The preparation of this document was financed in part through a comprehensive planning grant from the Department of Housing and Urban Development, as administered by the Maryland Department of State Planning.



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